Technical Report 733

Military and Civilian Earnings: An Index Number Comparison

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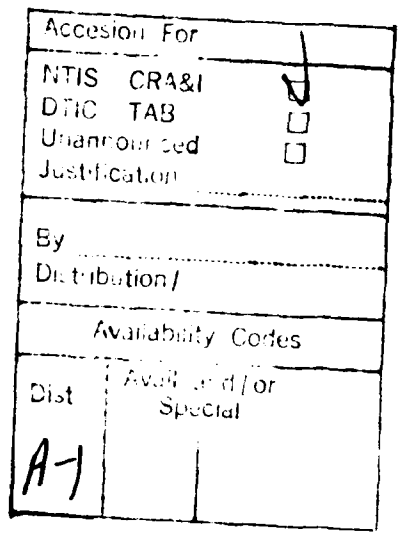

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There has been continuing interest in the question of how well paid soldiers are relative to their civilian counterparts. Historical comparisons are shown here for several components of military pay, including basic pay, subsistence and housing allowances, and tax advantages. The results of this study show that soldiers' pay has kept pace with inflation since 1981, but that higher ranking soldiers are still underpaid relative to their counterparts who had the same rank, years of service, and marital status in 1972.

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FOREWORD

The Manpower and Personnel Policy Research Group of the U.S. Army Research Institute (ARI) performs research in the economics of manpower, personnel, and training issues of particular significance to the U.S. Army. Questions about the relative pay levels of military and civilian personnel have generated continuing interest.

Every 4 years the President establishes a Quadrennial Review of Military Compensation (QRMC) to study important military compensation issues. This Report was prepared as part of the Program Task in recruiting and retention of the Manpower and Personnel Research Laboratory, under the 10 Jan 82 memorandum from the Deputy Chief of Staff for Personnel to the Commander of the Army Research Institute, in support of the Sixth QRMC. In January 1987 the results of the report were briefed to the Directorate of Civilian Personnel, which concurred with its findings. The ideas developed in this report will be used to cast light on the development of several of the important components of military income, and contribute to the continuing discussion of the appropriate level of military compensation.

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MILITARY AND CIVILIAN EARNINGS: AN INDEX NUMBER COMPARISON

EXECUTIVE SUMMARY

Requirement:

The U.S. Army Research Institute conducts research on manpower, personnel, and training issues of particular significance and interest to the U.S. Army. Every four years the President establishes a Quadrennial Review of Military Compensation (QRMC) to study important military compensation issues. This research was conducted for the Army's Deputy Chief of Staff for Personnel, in anticipation of the requirements of the Sixth QRMC. Disposable income and total compensation comparisons are made here for several categories of soldiers and civilians.

Procedure:

The author used a number of price series previously unavailable to the public to measure cost of living changes since 1972. In addition, measures are calculated here for the first time for disposable income and total compensation for several categories of soldiers, at different time periods. Allowance is made for inclusion of enlistment bonuses and reenlistment bonuses, health and life insurance, PX/Commissary privileges, tax advantages, and the retirement system.

Findings:

The results of this study show that soldiers' pay has kept pace with inflation since 1981, but that higher ranking soldiers are still underpaid relative to their counterparts who had the same rank, years of service, and marital status in 1972.

Utilization of Findings:

The results of this report may be used by the Sixth Quadrennial Review of Military Compensation, in response to the types of questions about the relative size of military compensation that have been asked during virtually every other formal study of military pay and benefits. The report also contains a great deal of up-to-date data not available elsewhere, so it may also be used as a resource document for other analysts who will be working in the area.

MILITARY AND CIVILIAN EARNINGS: AN INDEX NUMBER COMPARISON

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I. INTRODUCTION

There has been considerable research over the past several years on the question of how well military personnel are paid relative to civilians. The question cannot be answered exactly, due in large part to data limitations (particularly on post-service earnings) and to the "X-factor," a term that refers to the differential risks, peculiarities and hardships associated with employment in military service. Nevertheless, analysts are constantly seeking a framework for making comparisons between the compensation levels of soldiers and civilians.

The U.S. General Accounting Office (hereafter GAO) recently outlined the types of issues involved in compensation studies (GAO, 1986). Analysts must choose how to link military and private sector pay. They must choose a specific comparison level, and choose the type of demographic variables and the elements of military pay that will be included. They can choose either a current income analysis, emphasizing one year's income, or a life-cycle analysis, emphasizing total expected lifetime earnings. In addition, analysts might choose a "market" framework, which asserts that compensation should be considered in an economic setting or an "institutional" framework, which asserts that nonmonetary factors are just as important as monetary factors.

Within the overall setting of the market framework and the institutional framework, there are two possible approaches to setting military pay scales. The "comparability" approach, which attempts to compare similar military and private sector occupations without consideration of the marketplace, and the "competitive" approach, which attempts to include considerations of supply and demand. Economists also use the terms "equity" and "efficiency" for the two approaches. We will use "comparability" and "competitiveness" because they have become pervasive in the military compensation literature.

Harper (1986) has noted that because there are many papers on various aspects of

military compensation, it is important to try to develop a philosophy of military pay. We will discuss representative recent work in the compensation area, beginning with the debate over the appropriate overall framework.

Moskos (1978-1981), one of the leading proponents of the institutional framework, has consistently argued that concepts such as patriotism, unit cohesion, and dedication to duty are more important than economic factors, and that since all military jobs are equally important, *differential* pays should be minimized and pay comparability studies are irrelevant.

A leading proponent of the opposite view, the market framework, is Binkin (1975; see also Binkin and Kyriakopoulos, 1981). Binkin argues for moving away from a compensation system based on pay grades and years of service to one in which skilled occupations receive higher pay. He argues that the Defense Department should have more flexibility to respond to shortages in the recruiting marketplace, especially in the face of unfavorable recruiting demographics over the next decade.

Turning to the competitiveness versus comparability issue, there have been few studies that describe the exact nature of "competitiveness" and how it would be used in practice, perhaps because it is difficult to define exactly what "competitiveness" means. Adherents tend to discuss making pay changes on an ad hoc basis, reacting to shortages or surpluses of recruits (GAO, 1986, pp. 38-39). Congressional staffers also note that lawmakers implicitly adopt the competitive approach, since they see recruiting and retention rates as the key indicator of pay adequacy, not comparability (Carney, 1986b, p. 28; Slackman, 1986, Chapter II).

In contrast to competitiveness studies, there are a number of comparability analyses. Ferber (1986), in a study for the U.S. General Accounting Office, compared compensation levels for soldiers and civilians of the same age, level of education, and sex. He did not attempt to equate skill levels or levels of responsibility, and he

concluded that military compensation exceeded that for civilians in the majority of his comparison groups. The opposite conclusion was reached in another GAO study by Conahan (1986), who matched civilian and military occupational categories and showed military pay tended to be lower than civilian pay. A study by Dale and Hill (1984) matched soldiers' and civilians' skill levels and compared life-cycle earnings estimates for several occupational categories. They also found that many soldiers are underpaid relative to civilians, especially in highly technical occupations.

Borjas and Welch (1986) calculate postservice earnings of soldiers, and conclude that soldiers have lower earnings than civilians throughout their second careers. They disagree with Cooper (1977, 1981) who showed that military retirees' earnings were frequently higher than their civilian counterparts. Borjas and Welch argued that Cooper used two unjustifiable assumptions that bias retiree earnings upward. They had shown (Borjas and Welch, 1983) that Cooper's "typical" retiree was really atypical and that Cooper's use of a zero discount rate makes retirees' earnings look unjustifiably large.

Computer Based Systems, Inc. (1985) recently completed a pilot study that compared a measure of total compensation for soldiers with carefully selected private sector employees for different regions of the country. One of their key findings was that soldiers are invariably relatively underpaid, if allowance is made for the different lengths of workweeks.

The General Accounting Office (1984, 1985) calculated disposable income of selected soldiers and civil servants, in response to specific requests from the Congress. They did not attempt to match occupational categories exactly, nor did they draw any conclusions about the appropriate level of compensation.

Other studies that are closely related to pay comparability include those that focus on the military retirement system (Talbot, 1976; Goldich, 1983; Singer, 1984). They consider the effects of various compensation levels and lengths of service required to

qualify for military pensions. The Congress adopted very few changes to the military retirement system discussed in those studies.

A Joint Service Study Group (1982) analyzed the military pay adjustment mechanism and recommended that the Employment Cost Index (ECI) of the Bureau of Labor Statistics be used as the basis for changes in military pay. They recommended using ECI because it is the wage equivalent of the Consumer Price Index, and it covers occupations which represent 70 percent of the military force. We update here several of the price indices discussed by the Joint Service Study Group as well as present and discuss alternative indices with which to compare military and civilian pay.

There is clearly no single correct way to approach the study of military pay. The proper framework might depend upon the policy objective under consideration. For example, if the issue is recruitment, the market approach might be more relevant since the right level of pay is, by definition, the level that attracts enough high quality applicants to meet demand. When reenlistment is the issue, however, pay inequities could affect morale and readiness in ways not directly measurable by supply and demand imbalances.

We compare disposable income and total compensation for several categories of military personnel, emphasizing the years 1972, 1981, and 1985, and construct index numbers for military and civilian compensation for comparison purposes. We used 1972 as a reference year, because the Defense Department considered the pay levels then to be both comparable and competitive with the private sector (Talbot and Ogloblin, 1982 p. 15). Similarly, there was general agreement that pay comparability was reached in October 1981 (Computer Based Systems, Inc., 1985, p. II-5).

It is important to note that we do not have to prove or even assume that there was pay comparability in 1972 or 1981 if, in our analysis, we take the perspective of an individual soldier and we appeal to the psychological theory of "relative deprivation."

That theory was developed by Army researchers after World War II (Babbie, 1975, Chapter 17), and has gradually become adopted, at least informally, in economic analysis (Thurow, 1981, pp. 18-19, 56-57, 198-200). The theory asserts that individuals will more willingly endure hardships if their peers are perceived to be enduring the same hardships. Conversely, people who become better off will nevertheless feel resentful if they perceive their peers to become even more well off. Put another way, they will feel resentful if they feel "relatively deprived".

Since military newspapers have recently been stressing that pay comparability (e.g., AUSA, 1986) existed in 1972 and 1981, soldiers are increasingly likely to ask themselves how relatively well off they would have been in 1972 or 1981. Soldiers' perceptions can have a profound impact on Army manpower policy, if soldiers' reactions result in decreased retention rates.

Evidence has been steadily accumulating that soldiers are paying increasing attention to their relative income status. Shoemaker (1986) reports impending retirement cuts will be watched carefully by soldiers. Carney (1986a) quotes LTG Robert Elton, the Army's Deputy Chief of Staff for Personnel, who in testimony before Congress said that soldiers knew that current proposed retirement cuts would not affect them but they were afraid that the next round of cuts might.

In light of the relative deprivation hypothesis, it is clear that we do not need to know whether comparability actually existed in 1972 or 1981. We need only examine each person's case individually, and compare a soldier's increase in income between those two years and 1985 with a civilian's increase in income, for evidence of relative deprivation.

We note here that relative deprivation is only one of a number of possible hypotheses relating to behavioral choices. Another approach is the Annualized Cost of Leaving (ACOL) model, in which soldiers continuously evaluate their lifestream earnings

in the military and compare them to their alternative potential earnings in civilian life. For a discussion of that approach see Warner (1979).

There are a number of limitations to this study. First, economic decisions are frequently made on the basis of household income, not individual income. This is a problem because the percentage of two income families has been changing over the period from 1972 to the present. Second, we use current income rather than life-cycle income. Enlistment and retention rates could be affected by expected lifetime earnings, rather than current earnings. Third, there is no attempt to equate military and civilian jobs. Military jobs are fundamentally different from civilian jobs, so we cannot address the "equal pay for equal work" issue here.

This paper thus focuses on the relative deprivation hypothesis -- the one key question that a soldier in 1985 might have asked: "If I had the same rank, years of service, and family size in 1972 or 1981 that I do now, would I have been relatively better off then than I am now?" *This is an important question* that has implications for recruiting and retention, and it is addressed for the first time in this paper.

To summarize, this report differs from previous studies in that it:

(1) Presents a narrative background and up-to-date data for many components of military compensation;

(2) Provides several price and cost comparison indices, some of which have not been presented before;

(3) Provides disposable income comparisons and total compensation comparisons for several categories of soldiers and civilians; and,

(4) Directly addresses the relative deprivation hypothesis.

II. METHODOLOGY

The previous section discussed the need for analysts to choose a level of

aggregation, i.e., whether to examine incomes of individual soldiers or some index of the Army as a whole. We will adopt both approaches here. Analysts must also choose which pay and benefits to include in their measures of compensation. We use two measures here: disposable (after tax) income and total compensation. Our disposable income measure includes the readily measurable cash components of income. Most soldiers probably have a reasonably good intuitive idea of what disposable income is. Total compensation, on the other hand, includes a number of pays and benefits which are not as easily understood or quantified. We include as many components as possible in our measure of total compensation.

Aggregate Measures. We compare an index of military pay to various price indices. These indices are described in Section IV:

-- A Military Pay Index, that covers Basic Military Compensation.

-- A Total Military Compensation Index, that has imputed values for a wide range of military benefits.

-- The Consumer Price Index, which is a common measure of the inflation rate.

-- The Professional, Administrative, Technical, and Clerical (PATC) Index. This is a measure of private sector pay.

-- The Employment Cost Indices (ECI). These are two sets of indices, that measure changes in private sector wages and salaries and changes in private sector total compensation.

-- Office of Personnel Management Indices. These are measures of Civil Service pay and comparable private sector pay.

Trends in these indices since 1972 and 1981, when there supposedly was comparability between military and civilian pay, provide a rough indication of how increases in military pay have fared relative both to the inflation rate and to civilian pay increases.

Specific Pay Grades. We have chosen a representative sample of soldiers so that we can include a broad spectrum of pays and benefits. In contrast with our aggregate measures, we made a number of necessarily simplifying assumptions, such as family size and location of residence, to obtain specific income values. These assumptions are described in the next section. We compute disposable income and total compensation for 1972, 1981, and 1985 for the following individuals:

-- A 48 year old Major General, pay grade O-8, with 26 years of service and a family of four.
-- A 48 year old senior personnel manager with a family of four.
-- A 48 year old Civil Servant, pay grade GS-18 (step 1), with a family of four.
-- A 38 year old Major, pay grade O-4, with 16 years of service and a family of four.
-- A 38 year old personnel manager with a family of four.
-- A 38 year old Civil Servant, pay grade GS-13 (step 3), with a family of four.
-- A 37 year old Sergeant, pay grade E-7, with 18 years of service and a family of four.
-- A 37 year old employee in personnel management, with a family of four.
-- A 37 year old Civil Servant, pay grade GS-11 (step 4), with a family of four.
-- A 25 year old Sergeant, pay grade E-5, married with no children.
-- A 25 year old employee in personnel management, married with no children.
-- A 25 year old Civil Servant, pay grade GS-7 (step 1), married with no children.
-- A 20 year old unmarried Private, pay grade E-2 with less than two years of service.
-- A 20 year old unmarried minimum wage employee.
-- A 20 year old unmarried Civil Servant, pay grade GS-4 (step 1).

The ages and dependency status of the military personnel above are the most representative in each pay category (General Accounting Office, 1985). The Civil

Service and private sector pay categories are chosen to determine representative trends in civilian compensation. No attempt is made here to equate military and civilian jobs.

Pay Components. Disposable income is a concept that not only is readily understood by soldiers, it also has the advantage that most of its components can be easily quantified. Details of the various income components may be found in Section III. Included in soldiers' disposable incomes are:

-- Basic Pay

-- Basic Allowance for Subsistence (BAS)

-- Basic Allowance for Quarters (BAQ)

-- Variable Housing Allowance (VHA)

-- Enlistment Bonuses

-- Reenlistment Bonuses

-- Special and Incentive Pays

Disposable income is calculated using the cash benefits listed above, and assuming soldiers pay Federal taxes, Maryland state and local taxes, and social security taxes. Included in civilian workers' disposable incomes are:

-- Wages and Salaries

-- Bonuses (Private Sector)

Total Compensation. Included in the total compensation measures are all the components of disposable income and:

-- Soldiers' Tax Advantages on the tax-free BAS, BAQ, and VHA

-- Soldiers' PX/Commissary Privileges

-- Pensions

-- Health Insurance

-- Life Insurance

-- Value of Military Training

The measures of total compensation provide a useful frame of reference for comparing how individuals total pay and benefits packages have changed since our reference years of 1972 and 1981.

We turn now to a discussion of the individual components of military compensation.

III. COMPONENTS OF TOTAL COMPENSATION

Military compensation depends primarily on the rank and years of service of the soldier, and on whether or not the soldier has dependents. For our purposes we will adopt several categories that have been used by the General Accounting Office (1984, 1985) that will both provide a broad representation of soldiers and include the most significant types of compensation, such as enlistment and reenlistment bonuses. For civilians we will use Civil Service salaries, a minimum wage category, and several choices of personnel management categories from the National Survey of Professional, Administrative, Technical and Clerical Pay published annually by the Bureau of Labor Statistics (BLS, 1985). These comparisons are solely to examine trends, because virtually every study of this type emphasizes that military and civilian jobs are fundamentally different.

Several major pays and allowances are shown in Table 1. Some types of pay, such as basic pay and enlistment bonuses, are almost two hundred years old, while the variable housing allowance was instituted about five years ago. We will consider each in turn.

Basic Pay is the fully taxable part of cash compensation that is paid to all military personnel (see Wiram, 1983). Federal tax, state and local taxes, and the social security tax must be paid on this income.

Basic Allowance for Subsistence (BAS). These allowances are paid to all officers at all times, and to enlisteds who have permission to mess separately, or when rations in kind are not available. The original intent of this allowance was to provide payment for food for officers and enlisteds regardless of rank, pay grade, or state of dependency. These rates have been legislatively adjusted over the years, and as can be seen in Tables 2 and 3, today they are unrelated to the cost of food. We will include in our total military compensation index a weighted average of soldiers who receive BAS, which is 100% of officers and a fairly stable 58.5% and 61.3% of enlisteds in 1972 and 1981, respectively.

One reason that BAS has become divorced from actual food costs is that in 1967 the Congress directed that whenever Federal civilian employees received a pay increase, military personnel would receive a comparable increase in their Regular Military Compensation (RMC, which was then the sum of basic pay, BAS, Basic Allowance for Quarters (BAQ), and the tax advantage on the tax-free allowances). The entire increase, however, was to be incorporated into basic pay rather than the allowances. In 1974 this practice was discontinued and raises began to be equally distributed among basic pay, BAS, and BAQ. In 1977 the Congress once again permitted changes in the pay categories to be made on an unequal percentage basis. Except for a special 10% increase in BAS in 1980, however, the components of cash pay have been increased by equal percentages since 1978.

Basic Allowance for Quarters (BAQ). These allowances for personnel not living in government quarters are similar to BAS, except that the amount depends upon the soldier's rank and the number of dependents. In contrast to BAS, which was paid to a fairly constant percentage of soldiers in the past (59% of soldiers in 1972 and 61% in 1981), BAQ has been paid to increasing numbers of soldiers. To account for this we will impute a weighted average of BAQ, (which was paid to 47.2% of all personnel in 1972 and

steadily increased to 80.3% of all personnel in 1981), to represent the economic value of this benefit.

Since 1977 the President has been authorized to pay a "partial BAQ," sometimes referred to as a "rebate," to some enlisted soldiers without dependents who are not entitled to cash BAQ. This permits those soldiers to obtain the same benefits from a pay increase that goes to soldiers who receive an increase in their cash BAQ. Historical BAQ amounts are shown in Table 4. The family sizes assumed are the most common to each pay grade (General Accounting Office, 1985).

Variable Housing Allowance (VHA). The variable housing allowance was adopted in 1980 to compensate soldiers who live in high cost housing areas. Until 1985 a soldier was generally entitled to VHA if the average cost of housing in the area exceeded 115% of the member's BAQ entitlement. In January 1985 VHA was set by a formula whereby soldiers would be reimbursed by the difference between total housing costs over 80% of national housing costs (see Li and Worth, 1985). VHA values for selected pay grades in the Washington, D.C. area are shown in Table 5.

Washington, D.C., VHA values are provided for several reasons. First, the D.C. VHA is one of the highest in the country, so it makes the disposable income comparisons for soldiers very conservative, i.e., any change would probably lower the soldiers' disposable incomes relative to civilians. Second, it is consistent with previous studies (General Accounting Office, 1984, 1985) and thus allows some rough comparisons to be made. Third, the VHA amounts are roughly the same fraction of new housing costs and of existing housing costs over the time period being studied (Statistical Abstract, 1985, Tables 1305-1306). Trends in the D.C. VHA, then, should adequately reflect overall changes.

Tax Advantage. BAS and BAQ are tax-exempt, and the tax advantage measures this fact. The tax advantage is the added amount of taxable income a soldier would have to receive to leave him with the same after-tax income he has under the present system, if his nontaxable allowances were suddenly to become taxable. The tax advantage is computed with a number of simplifying assumptions: the standard deduction is used on tax returns; there is no other taxable income; if married, a joint return is filed and the spouse has no income; if unmarried, the soldier claims no other exemptions.

The simplified calculated tax advantage will understate the actual tax advantage if the soldier receives other taxable income or if his/her spouse has taxable income. The calculated tax advantage will overstate the actual tax advantage if the soldier has itemized deductions in excess of the standard deductions.

BMC and RMC. RMC and BMC are two of the most common measures of military compensation. Before 1980, the term Regular Military Compensation (RMC) referred to the sum of basic pay, BAS, BAQ, and tax advantages. In 1980 RMC was renamed Basic Military Compensation (BMC), and the term RMC was redefined to include VHA and its tax advantage. RMC and BMC are two of the most common measures of military compensation.

Enlistment Bonuses. Since the end of the draft, enlistment bonuses have been used extensively to attract volunteers who score in the top half of the Armed Forces Qualification test, especially into the Combat Arms (see Table 6). In this report we assume that the Private (E-2) is a high school graduate who received an $8,000 enlistment bonus for entering the Combat Arms.

Reenlistment Bonuses. In 1954 Congress authorized a bonus of one month's basic pay for each year of a first reenlistment, two-thirds of one month's pay for each year of a second reenlistment, one-third of one month's basic pay for each year of a third reenlistment, and one-sixth of one month's basic pay for fourth and subsequent reenlistments, up to a career total of $2,000.

In 1965 the Variable Reenlistment Bonus (VRB) program was established, in response to problems that were being encountered in first-term retention of personnel with technical skills. Levels of criticality were established, so that a soldier with the most critical skill could receive a VRB payment of four times his regular reenlistment bonus. Since regular reenlistment bonuses were capped at $2,000, the largest potential VRB payment was $8,000.

The regular reenlistment bonus program and VRB program were terminated in 1974. Those bonuses, which were paid to everyone, were deemed to be economically inefficient, since many soldiers would have reenlisted even without a bonus.

In 1974 Congress established the Selective Reenlistment Bonus (SRB) program. An SRB of up to $15,000 could be paid to a service member with a critical skill. In 1980 the maximum for Army personnel was raised to $16,000, and in 1985 the maximum allowable payment was raised to $30,000, although the Army has decided to pay no more than $20,000, for budgetary reasons (Table 7).

SRB payments are made at six levels of criticality and at three time periods or "zones" in a person's career. Zone A consists of reenlistments between twenty-one months and six years of active duty, Zone B falls between six and ten years of active duty, and Zone C falls between ten and fourteen years of active duty. A member must be in pay grade E-3 or higher to qualify for any SRB.

Reenlistment bonuses are incorporated in this study in the computations for individuals by imputing a bonus to the sergeant (E-5). They are incorporated in the total

compensation index by adding an average reenlistment bonus.

PX/Commissary Privileges. All soldiers have the opportunity to take advantage of discount shopping. A study by Kroetch, et al. (1983) obtained savings of 22.6% to 30.6% at commissaries, and 4.1% to 26.2% at PX's, compared to selected retail stores. We will assess the value of this benefit by using the values obtained in a recent Computer Based Systems, Inc. (hereafter CBSI, 1985) study. PX savings are about 23.9% of retail prices, while commissary savings are 20% of retail prices. Those percentage savings have been fairly constant over time (Talbot and Ogloblin, 1982, p. 203). Using 17% of basic pay for food and tobacco, 4.7% of basic pay for apparel and services, and assuming 90% of food and tobacco is purchased at commissaries and 60% of apparel and services is purchased at PX's, we obtain a savings of 3.06% of basic pay for commissary usage and .67% for PX usage. This report imputes a net discount shopping benefit by adding 3.7% of basic pay. As with our other assumptions, this is a very conservative estimate in that it overstates the value of the benefit to the extent that the benefit is not used. Thus, any modification would likely lower the soldier's measured total compensation.

Pensions. This report adopts the valuation method of CBSI (1985, pp. III-41 thru III-42) and the Fifth Quadrennial Review of Military Compensation (Fifth QRMC, 1984, pp. VII-34 thru VII-38) and values the military pension benefit at 40% of Basic Military Compensation and private sector pensions at 20% of salary. The QRMC valuations were calculated in consultation with Department of Defense actuaries. This valuation of retirement benefits over all time periods considered here is quite valid because, in spite of considerable discussion over the years about possible modifications, very few changes have been made to the retirement system. Basic Military Compensation, Variable Housing Allowances, and imputed pension benefits make up by far the largest component of total military compensation measured in this report. All other benefits combined add only a

few percent to the total.

Health Insurance. We follow CBSI (1985) and quantify the military value of health insurance by imputing to military personnel the value of the Blue Cross/Blue Shield High Option coverage. Unmarried soldiers are imputed the self-only high option, and personnel with dependents are imputed the value of the self-and-family option. Private sector individuals are imputed a value of the Blue Cross/Blue Shield high option based upon the coverage size of their contribution and the probability that they will be included in a private sector health plan. In 1984, 62% of private sector employees had individual health plans totally financed by their employers (Bureau of Labor Statistics, 1985a) and 33% were in plans that required average contributions of $12 a month. 43% of private sector employees provided fully funded family health care benefits in 1984, and another 54% provided plans that required average contributions of $36 per month.

Using the figures above we calculated the average value of private sector health insurance in 1985 to be $4,793 for individuals and $2,313 for families. The corresponding amounts for soldiers were $5,210 and $2,412.

Life Insurance. Soldiers have a $3,000 death gratuity, which is valued using premium or term life rates defined by the Internal Revenue Service. Private sector employees were assumed to have policies equal to their annual salary (CBSI, 1985, p. III-30).

Soldiers have also been eligible since 1965 to enroll in the Servicemen's (or Service Members') Group Life Insurance (SGLI) plan. SGLI is term insurance that costs about 40¢ per month per $5,000 of insurance, up to a maximum of $50,000. It is administered by the Prudential Insurance Company, not the government. Since members pay the full cost of the insurance, it is not counted here in the soldiers' total compensation package.

Training and GI Bill Benefits. Army officers typically receive several levels of formal training. They may receive initial skill training upon commissioning. Subsequently they may receive more formal training in a specialized skill, such as at the Army's Armor Course. Promising officers at the intermediate school level may attend the Command and General Staff College. At the senior level they may attend the Army War College.

Enlisted personnel, on the other hand, generally receive basic training and then training at three Skill Levels: Initial Advanced Individual Training for Skill Level 1, and Advanced Training for Skill Levels 2 and 3. A few senior enlisted personnel may also attend schools, such as the Army Sergeants Major Academy.

Military training has always been needs-driven, in contrast to private sector training which, until recently, frequently emphasized personal employee growth rather than training to meet specific corporate goals. For a discussion of the $30 billion/year private sector formal training industry see the report by the American Society for Training and Development (1986).

In 1976 the Defense Department stopped compiling data on the total annual costs of military training. They did not have a separate officer and enlisted breakout for any of the years that they did compile data. Similarly, Frankel, et al. (1986) compute training costs for enlisteds, but they only report the total of initial costs plus other recruitment costs. On the other hand, the Army Cost and Economic Analysis Center (1984, p. A-83) has computed composite cost factors for recurring training (see also U.S. Army Finance and Accounting Center, 1983). We will use their cost factors and impute annual training benefits of $1,050 for officers and $180 for enlisteds in 1985, and we will impute $990 for officers and $170 for enlisteds in 1981. Using the consumer price index as a deflator, we will also impute $394 for officers and $68 for enlisteds in 1972.

Soldiers may obtain voluntary training and education by using GI Bill benefits. The GI Bill has had numerous changes over the years, having been replaced by the Veterans

Educational Assistance Program (VEAP) with its associated "kicker payments," and which was itself replaced by the "new GI Bill". Quantifying these benefits, which are primarily used by noncareer soldiers, is outside the scope of this paper. Future research may address these benefits as the program stabilizes and utilization data becomes available. In any case, in December 1985 enlistment bonuses were disallowed for Army College Fund participants. Since we can only incorporate one of these benefits into our analysis, we will use enlistment bonuses.

Special and Incentive Pays. The Army has a variety of other special and incentive pays for soldiers (see Talbot and Ogloblin, 1982, for a survey), the most important ones being for health professionals. Adequate data for many of those pays did not exist before 1982 (GAO, 1984, p. 46). In addition, some of them are very specialized or used by a small number of people (for example, Leprosy Duty Pay -- recently eliminated -- had applied to less than ten people). These pays go to only about 16% of soldiers (GAO, 1984, p. 46). We will incorporate such pays in our total compensation index by including an average pay value multiplied by the probability of receiving it.

Disposable Income. Disposable income is the after-tax total of the cash components of income described above. Some recent studies have considered after-tax income as well as total income of military personnel (GAO, 1984, 1985). We will also calculate disposable income in this report, using the assumptions that we used to compute the Federal tax advantage: standard deductions, number of exemptions equals family size, and joint returns with a family size greater than one. As noted by the GAO (1984, p. 13), the complexity of the tax laws necessitates some simplifying assumptions when calculating disposable incomes, since almost every family is different. We assume here that soldiers and civilians pay state and local income taxes in Maryland. This will also be

consistent with our use of the Washington, D.C. VHA rates.

IV. WAGE AND PRICE INDICES

Studies of military compensation invariably encounter questions of what, if any, type of price index should be used as a standard of comparison. The Deputy Assistant Secretary of Defense for Military Personnel and Force Management initiated a study in 1982 to determine a definitive military pay adjustment mechanism. The resulting report (Joint Service Study Group, 1982) discussed some of the pitfalls of attempting to make military and civilian earnings comparisons. It concluded that the Employment Cost Index (ECI) produced by the Bureau of Labor Statistics would be the best mechanism to determine military pay increases. Following is a discussion of the various price measures considered by the Joint Service Study Group, as well as several others that might be used as standards of reference.

CIVILIAN INDICES:

CPI. As the official measure of inflation, the Consumer Price Index is compiled by the Bureau of Labor Statistics of the U.S. Department of Labor. The CPI measures changes in price, of a market basket of goods and services. There are actually two indices: one covers all urban consumers, and the other covers urban wage earners and clerical workers.

Professional, Administrative, Technical, and Clerical (PATC) Index. The Bureau of Labor Statistics conducts an annual salary survey of about 600,000 private sector workers. The primary use of the survey is to provide a basis for adjustments in the pay of Federal Civil Servants. There is actually no official "PATC Index", but it is easy to construct one if

one can obtain a measure of the overall average change in salary levels, by simply selecting a base year = 100 and adding the yearly changes. This is the approach used here.

Employment Cost Index (ECI). The Bureau of Labor Statistics calculates two types of indices that measure changes in private sector compensation (see Schwenk, 1985, and Scheifer, 1978). The ECI Wage and Salary Series was begun in 1975, and the ECI Compensation Series was begun in 1980. Data are obtained from a sample of 2,700 businesses, and the results are representative of the employment costs of over 90 million workers.

Office of Personnel Management (OPM) Indices. Since 1967 Civil Service pay scales were by law kept comparable with the private sector by using the Bureau of Labor Statistics' annual survey of Professional, Administrative, Technical, and Clerical workers. Also in 1967 military pay increases were indexed to the Civil Service increases, a linkage that lasted until 1980, when recruiting difficulties led to soldiers receiving larger pay raises than civilians.

The BLS does not publish an official overall PATC index. They emphasize individual salary changes. Analysts at the Office of Personnel Management (OPM) calculate an overall average index change, by weighting individual occupational categories by the percent of total employment represented by that category. The results are used to recommend the annual Civil Service pay raise. What we report in this study is the (previously unpublished) index calculated by OPM.

Minimum Wage Index. Since pay scales for new enlistees are frequently compared to minimum wage rates, we construct a minimum wage index for changes in the hourly rate

since 1972.

Private Sector Hourly Earnings. The Bureau of Labor Statistics publishes an index of private nonagricultural hourly earnings (Council of Economic Advisors, 1986, p. 300). We report that series here, indexed at 1972 = 100.

MILITARY INDICES:

Military Pay Index. We provide an index for Basic Military Compensation (BMC) increases since 1972. This will provide a crude but useful comparison of relative increases in military pay versus the other cost indices.

Total Military Compensation Index. We calculated an index for all of the imputed values of the components of military income. This includes all of Basic Military Compensation, plus the Variable Housing Allowance, PX and Commissary privileges, an imputed military retirement benefits, plus enlistment and reenlistment bonuses times the probability of receiving them.

V. COMPENSATION COMPARISONS

Various price indices discussed in the last section are shown in Tables 8 and 9. The Consumer Price Index rose 166.7% from 1972 through 1985. This is remarkably close to the rise of 165% in the PATC index and the 167% increase in the Total Military Compensation index over the same period. Basic Military Compensation (MILPAY) rose 138.5% from 1972 through 1985, which was less than both the CPI and the PATC index, but about the same as the 137.1% rise in private sector hourly earnings.

The GS and OPM indices shown in Table 8 were provided by analysts at the office

of Personnel Management. The GS index depicts Civil Service salary increases since 1972. The OPM index shows the results of OPM analysts' combining PATC survey data to reflect the composition of the Federal civilian work force.

The minimum wage index (MINWGE) in Table 9 reflects the fact that changes in the hourly minimum wage have occurred in jumps. The two Employment Cost Indices (ECI-WS, ECI-TC) are relatively new, and are useful for analyzing the individual income comparisons, to which we now turn.

Military Pay. We use tables 10 through 14, which show compensation comparisons for several ranks of soldiers, to consider the relative deprivation hypothesis. "Other benefits" refers to the imputed PX/Commissary privileges, health insurance, and life insurance. The private (E-2) is also imputed to have an enlistment bonus, and the sergeant (E-5) is imputed to have a reenlistment bonus. Taxes include Federal tax, FICA (social security), and state and local taxes in Maryland.

As an example, consider the Major General category shown in Table 10. A typical 48-year old Major General, with 26 years of service, and a family of 4 had disposable income of $56,210 in 1985, which was 141% higher than a similar officer had in 1972 and 22% higher than in 1981. Although these are approximate numbers, the trends are clear. Consumer prices rose 166.7% since 1972 (Table 8) and 16.4% since 1981. Thus, for most categories, soldiers' disposable income has approximately kept pace with inflation since 1981, but still has not kept up with inflation since 1972. The same is true for total compensation, of which the imputed retirement benefits is by far the largest component.

Similar results hold for typical private sector occupations, as shown in Tables 15 through 19. Most studies emphasize that exact comparisons cannot be made between military and private sector occupations. That is certainly true here, over a period that includes the Vietnam War. Note also that dollar amounts shown in the tables cannot be

compared for military and civilian occupations, since the military tables include imputed training costs and the civilian tables do not. Nevertheless, we can still draw some useful conclusions by examining trends in the private sector, in terms of percentage changes. The occupations were taken from the PATC category of Personnel Management, and a minimum wage employee was included in Table 19. "Other benefits" include health and life insurance, and the imputed value of bonuses and thrift plans. Once again we assumed standard deductions and Federal taxes, FICA, and state and local Maryland taxes. The PATC private sector employees have also generally fared better since 1981 than since 1972. Minimum wage employees have fared worst of all.

Finally, consider Civil Service workers, shown in Tables 20 through 24. These categories were used by the Third QRMC and the GAO (1985) for comparison purposes, although the Third QRMC makes a stronger statement that these categories are comparable to the military categories used in this report. In any case, Civil Servants have generally fared worse than either soldiers or the private sector. For example, the Civil Service General Schedule Index (GS) rose 98.4% from 1972 through 1985, while the Basic Military Compensation Index (MILPAY) rose 138.5% and private sector pay rose 165% (Tables 25 and 26). The effects of the pay cap on GS-18 pay grade workers (Table 20) is especially evident, since even a 37% increase in both disposable income and total compensation since 1981 has still left them far behind where similar families were in 1972.

VI. CONCLUSIONS

There are basic questions to be asked in attempting to compute military and civilian pay over time. For example, should military pay in 1985 be compared to the Consumer Price Index, to private sector pay, or to military pay in earlier years? Since many soldiers in 1985 will not be able to remember 1972, that is probably not the best

comparison regardless of what the objective data might show. On the other hand, the Consumer Price Index has had a number of definitional changes over the years. Finally, compositional shifts, such as more women entering the labor force at low wages since 1972, complicate the private sector analysis. Thus there is not a clear best standard of comparison.

Many of the most important ideas in this study are shown in Tables 25 and 26. Officers' disposable incomes have kept pace with inflation since 1981 (16% to 22% versus inflation of 16.4%). Enlisteds' disposable incomes have not kept pace with inflation since 1981 (12% to 15% versus inflation of 16.4%). All soldiers, except for the lowest pay grades, have had their disposable income fall behind inflation since 1972 (132% to 173% versus inflation of 167%). This report and others have shown that civilians' disposable incomes have also fared worse than inflation since 1972 (Berger, 1986). But soldiers total compensation has not kept pace with the private sector as measured by the 26.4% rise in the Compensation Series of the Employment Cost Index (Table 9, and Carney, 1986b).

The Congressional Budget Office (1986, p. 6) projects an increase in consumer prices of 3.4% in 1986 and 4.2% in 1987. Using that projection and the data in Table 8 we compute that it would take a pay increase in FY87 of about 4.1% for soldiers to maintain the same disposable income level that their counterparts had in 1981, but it would take a pay increase of about 17% to restore soldiers to the same disposable income level that their counterparts had in 1972.

The results of this report bear upon a number of significant policy issues. They are especially relevant to the debate over the size of military retirement benefits. As can be clearly seen from Tables 10 through 14, the imputed value of military retirement is a very significant part of total compensation. Thus, to the extent that one accepts the "relative deprivation" hypothesis, wherein people react strongly to perceived changes in their relative status, the fact that total military compensation lags total private sector

compensation since 1981 is very important. It means that cuts in military retirement will make soldiers feel even more "relatively deprived". We agree with Borjas and Welch (1986) that this could lead to serious recruiting and retention difficulties in the future.

There are several important research questions that may be addressed by future research in the area of compensation. It would be beneficial to have a realistic estimate of the value of in-kind food and housing benefits for various regions of the country. A demographic study of the changing composition of the number of two income families would be useful, since over half of all families in the U.S. now contain a working spouse. The entire question of whether military pay should be structured in terms of a competitiveness or comparability framework could be addressed. Finally, the paper has not touched on the increasingly important question of the structure and appropriate level of compensation for the Army Reserves. Since the Reserves will play an expanding role in the total Army in coming years, the collection and analysis of Reserve data is an increasingly important topic for future research.

TABLE 1

MAJOR PAYS AND ALLOWANCES

TITLE	1 OCT 85 AMOUNT	YEAR STARTED
Basic Pay	$639 - $5724.90 per month	1790
Enlistment Bonus	$8,000 maximum	1791
Quarters Allowance	$680.70 maximum	1878
Reenlistment Bonus	$30,000 authorized	1791
Retired Pay	50 - 75% of basic pay	1861
Subsistence Allowance	$109.37/month (officers)	1808
Variable Housing Allowance	$262.34/month (D.C. area, MAJ with dependents)	1981

Source: Talbot and Ogloblin (1982, pp. viii-ix), updated with data from the Compensation Directorate, Office of the Deputy Assistant Secretary of Defense (MP&FM).

TABLE 2

BASIC ALLOWANCE FOR SUBSISTENCE

OFFICERS

YEAR	MONTHLY RATE	ACTUAL FOOD COST
1958 - 1973	$47.88	1958 = $39.89; 1973 = $63.73
1974	50.52	72.88
1975	53.05	79.05
1976	55.61	81.49
1977	59.53	86.62
1978	62.80	95.28
1979	67.21	105.69
1980	82.58	114.75
1981	94.39	123.76
1982	98.17	128.26
1983	102.10	131.47
1984	106.18	136.52
1985	109.37	138.21

Source of Actual Food Costs: Statistical Abstract of the United States (various years). One-half of the 1967 weekly food cost for a couple, times 4.33 to get a monthly rate, multiplied by the Consumer Price Index for food (1967 = 100).

TABLE 3

BASIC ALLOWANCE FOR SUBSISTENCE

ENLISTEDS

YEAR	DAILY RATION RATE		ACTUAL FOOD COST
CALENDAR YEARS:			
1958	$1.10		$1.32
1959	1.15		1.30
1960	1.10		1.31
1962	1.07		1.34
1963	1.03		1.36
1964	1.05		1.38
1965	1.09		1.41
1966	1.10		1.48
(APR66)	1.17	(MAY 66)	1.48
1967	1.30		1.49
1968	1.32		1.54
1970	1.39		1.71
1971	1.52		1.76
1972	1.46		1.84
1973	1.65		2.11
1974	2.28		2.41
FISCAL YEARS:			
1975	$2.41		$2.61
1976	2.53		2.69
1977	2.65		2.86
1978	2.84		3.15
1979	3.00		3.49
1980	3.21		3.79
1981	3.94		4.09
1982	4.50		4.26
1983	4.68		4.35
1984	4.87		4.51
1985	5.06		4.57
1986	5.21	(May 86)	4.71

Source of Actual Food Costs: Statistical Abstract of the U.S. (various years). One-half 1967 weekly food cost for a couple, divided by seven to get a daily rate, multiplied by the Consumer Price Index for food (1967 = 100).

TABLE 4

BASIC ALLOWANCE FOR QUARTERS FOR SELECTED PAY GRADES

YEARLY RATES

YEAR	PVT E-2	SGT E-5	SGT E-7	MAJ O-4	MG O-8
1967	$ 720	$1260	$1379	$1741	$2412
1971	767	1663	1937	2585	3456
1974	810	1757	2045	2729	3647
1975	850	1843	2146	2866	3830
1976	940	2020	2380	3229	4457
1977	1040	2228	2639	3622	5090
1978	1098	2351	2783	3820	5371
1979	1174	2516	2977	4086	5749
1980	1310	2812	3326	4565	6422
1981	1498	3215	3802	5216	7340
1982	1559	3344	3953	5425	7636
1983	1620	3478	4111	5641	7942
1984	1757	3604	4471	6059	7931
1985	1811	3712	4604	6239	8168

Notes: PVT assumes family size = 1
SGT (E-5) assumes family size = 2
All others assume family size = 4

TABLE 5

VARIABLE HOUSING ALLOWANCE FOR SELECTED PAY GRADES

YEARLY RATES, WASHINGTON, D.C. AREA

YEAR	PVT E-2	SGT E-5	SGT E-7	MAJ O-4	MG O-8
1980	$ 852	$1406	$1830	$2282	$3211
1981	809	1768	2433	2347	1762
1982	920	1839	2530	2658	2214
1983	858	1706	2371	2442	1658
1984	1134	2276	2665	2950	2476
1985	1220	2390	2810	3148	2921

Notes: PVT assumes family size = 1
SGT (E-5) assume family size = 2
All others assume family size = 4

TABLE 6

ARMY ENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
1921-1971	None
1972	$1500 (Combat Arms only)
1973	$2500 (Combat Arms only)
1974	$3,000 (Any critical skills)
1981	$5,000 (Critical skills)
1981	$8,000 (Critical Skills)
20 Dec 85	None for Army College Fund participants

Note: The maximum enlisted bonus was changed twice in 1981.

TABLE 7

ARMY REENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
	REGULAR REENLISTMENT BONUS
1954	$2,000 Career Total
1 JUN 1974	Discontinued for new soldiers
	VARIABLE REENLISTMENT BONUS (VRB)
1965	$8,000
1974	Discontinued
	SELECTIVE REENLISTMENT BONUS (SRB)
1974	$15,000
1980	16,000
1985	30,000 authorized

Note: The Army has limited the 1985 maximum SRB to $20,000 for budgetary reasons.

TABLE 8

SELECTED WAGE AND PRICE INDICES

1972 = 100

YEAR	HREARN	CPI	MILPAY	GS	OPM
1972	100.0	100.0	100.0	100.0	100.0
1973	106.2	112.5	113.7	105.1	104.1
1974	114.6	126.2	120.2	110.2	109.0
1975	124.2	135.1	126.0	116.2	115.0
1976	133.1	141.6	132.1	122.0	124.9
1977	143.3	151.2	141.4	128.3	127.0
1978	155.0	164.8	149.2	137.3	135.9
1979	167.3	186.9	159.7	144.8	147.3
1980	182.4	210.4	178.3	155.0	158.2
1981	199.0	229.1	203.8	169.1	174.0
1982	212.8	238.0	212.0	177.2	192.6
1983	222.6	247.0	220.5	184.3	207.8
1984	230.2	257.0	229.3	191.7	221.6
1985	237.1	266.7	238.5	198.4	224.3
1986			245.7	198.4	233.9

HREARN = Average Hourly Earnings in Private Nonagricultural Industries
CPI = Consumer Price Index
MILPAY = Basic Military Compensation Index
GS = Civil Service General Schedule Index
OPM = Office of Personnel Management Comparability Index
Interpretation: Each number minus 100 gives the percentage change in the index since 1972. Examples: CPI (inflation rate) of 266.7 in 1985 means that consumer prices increased by (266.7 - 100) = 166.7% since 1972. MILPAY of 238.5 means that Basic Military Compensation has increased by (238.5 -100) = 138.5% since 1972, which is not as much as the inflation rate.

TABLE 9

SELECTED WAGE AND PRICE INDICES

1972 = 100 EXCEPT ECI-WS AND ECI-TC

YEAR	TCMIL	PATC	MINWGE	ECI-WS	ECI-TC
1972	100.0	100.0	100.0		
1973	114.4	111.5	100.0		
1974	120.9	118.6	125.0		
1975	127.6	129.3	131.3	100.0	
1976	133.7	138.4	143.7	107.2	
1977	144.0	147.9	143.7	114.8	
1978	152.0	159.6	165.6	124.0	
1979	163.7	172.0	181.1	133.6	
1980	183.9	187.7	193.6	146.1	
1981	216.1	205.9	209.3	159.4	100.0
1982	228.9	225.5	209.3	170.4	107.5
1983	241.1	242.2	209.3	178.9	114.5
1984	254.4	253.6	209.3	186.3	120.8
1985	267.0	265.0	209.3	195.2	126.4

TCMIL = Total Military Compensation Index
PATC = Professional, Administrative, Technical, and Clerical Index
MINWGE = Minimum Wage Index
ECI-WS = Employment Cost Index: Wage and Salary Series
ECI-TC = Employment Cost Index: Total Compensation Series

Interpretation: PATC of 265.0 means the index increases by (265.0 - 100) = 165% since 1972. ECI-WS of 195.2 in 1985 means that the index increased by (195.2 - 100) = 95.2% since 1975. ECI-TC increased 26.4% from 1981 through 1985. Percentage changes are the best way to make comparisons since the ECI indices have different base years from PATC and MINWGE so they cannot be compared directly.

TABLE 10

COMPENSATION COMPARISONS

MAJOR GENERAL, PAY GRADE O-8

48 YEARS OLD, 26 YEARS OF SERVICE, FAMILY SIZE = 4

	1972	1981	1985
BASIC PAY	$30,373	$57,499	$68,011
BAS	575	1133	1274
BAQ	3456	7340	7931
VHA D.C.	--	1762	2476
TAX ADV	3023	6134	6666
PENSION	14,971	28,842	33,553
OTHER BENEFITS	2479	5531	8896
TAXES	11,498	22,660	24,532
DISP INC.	$23,300	$46,064	$56,210
% CHG SINCE 1972	--	98%	141%
% CHG SINCE 1981	--	--	22%
TOT COMP.	$54,877	$108,241	$128,807
% CHG SINCE 1972	--	97%	135%
% CHG SINCE 1981	--	--	19%

TABLE 11

COMPENSATION COMPARISONS

MAJOR, PAY GRADE O-4

38 YEARS OLD, 16 YEARS OF SERVICE, FAMILY SIZE = 4

	1972	1981	1985
BASIC PAY	$15,401	$30,665	$34,495
BAS	575	1133	1274
BAQ	2585	5216	6059
VHA D.C.	—	2347	2950
TAX ADV	1264	2540	3106
PENSIONS	7930	15,822	17,974
OTHER BENEFITS	1923	3633	7650
TAXES	3680	8854	10,314
DISP INC.	$15,277	$30,601	$35,508
% CHG SINCE 1972	--	100%	132%
% CHG SINCE 1981	--	--	16%
TOT COMP.	$29,678	$61,356	$73,508
% CHG SINCE 1972	--	107%	148%
% CHG SINCE 1981	--	--	20%

TABLE 12

COMPENSATION COMPARISONS

SERGEANT, PAY GRADE E-7

37 YEARS OLD, 18 YEARS OF SERVICE, FAMILY SIZE = 4

	1972	1981	1985
BASIC PAY	$8287	$16,898	$19,008
BAS	533	1643	1847
BAQ	1937	3802	4471
VHA D.C.	--	2433	2665
TAX ADV.	553	1225	1419
PENSION	4524	9569	10,698
OTHER BENEFITS	1334	3203	6207
TAXES	1910	3558	3863
DISP INC.	$10,214	$21,742	$24,308
% CHG SINCE 1972	--	113%	138%
% CHG SINCE 1981	--	--	12%
TOT COMP.	$18,467	$38,773	$46,315
% CHG SINCE 1972	--	110%	152%
% CHG SINCE 1981	--	--	20%

TABLE 13

COMPENSATION COMPARISONS

SERGEANT, PAY GRADE E-5

25 YEARS OLD, 6 YEARS OF SERVICE, FAMILY SIZE = 2

	1972	1981	1985
BASIC PAY	$5490	$11,135	$12,528
BAS	533	1643	1847
BAQ	1663	3215	3604
VHA D.C.	--	1768	2276
TAX ADV	402	889	997
PENSION	3235	6753	7590
OTHER BENEFITS	1458	3265	6243
TAXES	876	2228	2446
DISP INC.	$6878	$15,703	$17,989
% CHG SINCE 1972	--	128%	162%
% CHG SINCE 1981	--	--	15%
TOT COMP.	$12,781	$28,668	$35,085
% CHG SINCE 1972	--	124%	174%
% CHG SINCE 1981	--	--	22%

TABLE 14

COMPENSATION COMPARISONS

PRIVATE, PAY GRADE E-2

20 YEARS OLD, LESS THAN 2 YEARS OF SERVICE, FAMILY SIZE = 1

	1972	1981	1985
BASIC PAY	$3848	$7420	$8345
BAS	533	1643	1847
BAQ	767	1498	1757
VHA D.C.	--	809	1134
TAX ADV.	243	587	675
PENSION	2156	4541	5050
OTHER BENEFITS	979	3617	4953
TAXES	617	1736	1701
DISP INC.	$4974	$12,009	$13,562
% CHG SINCE 1972	--	141%	173%
% CHG SINCE 1981	--	--	13%
TOT COMP.	$8526	$20,115	$23,761
% CHG SINCE 1972	--	136%	179%
% CHG SINCE 1981	--	--	18%

TABLE 15

COMPENSATION COMPARISONS

PERSONNEL MANAGER, PATC CATEGORY DP-IV

48 YEARS OLD, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$27,984	$62,580	$78,469
PENSION	5597	12,516	15,694
OTHER BENEFITS	1082	3742	5303
TAXES	10,290	24,822	32,937
DISP INC.	$17,778	$37,946	$45,767
% CHG SINCE 1972	--	113%	157%
% CHG SINCE 1981	--	--	21%
TOT COMP.	$34,663	$78,838	$99,466
% CHG SINCE 1972	--	127%	187%
% CHG SINCE 1981	--	--	26%

TABLE 16

COMPENSATION COMPARISONS

PERSONNEL MANAGER, PATC CATEGORY DP-II

38 YEARS OLD, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$16,176	$33,191	$45,000
PENSION	3235	6798	9000
OTHER BENEFITS	956	3496	4987
TAXES	5107	11,772	13,530
DISP INC.	$11,118	$25,688	$31,605
% CHG SINCE 1972	--	131%	184%
% CHG SINCE 1981	--	--	23%
TOT COMP.	$20,367	$48,314	$58,987
% CHG SINCE 1972	--	137%	190%
% CHG SINCE 1981	--	--	22%

TABLE 17

COMPENSATION COMPARISONS

PERSONNEL MANAGEMENT, PATC CATEGORY JA-III

37 YEARS OLD, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$10,992	$21,598	$26,190
PENSION	2198	4320	5238
OTHER BENEFITS	930	3429	4908
TAXES	3316	5137	6072
DISP INC.	$7709	$16,526	$20,197
% CHG SINCE 1972	—	114%	162%
% CHG SINCE 1981	—	--	22%
TOT COMP.	$14,120	$29,437	$36,336
% CHG SINCE 1972	—	108%	157%
% CHG SINCE 1981	—	--	24%

TABLE 18

COMPENSATION COMPARISONS

PERSONNEL MANAGEMENT, PATC CATEGORY JA-I

25 YEARS OLD, FAMILY SIZE = 2

	1972	1981	1985
SALARY	$8636	$16,129	$18,493
PENSION	1727	3226	3699
OTHER BENEFITS	916	3399	4866
TAXES	1818	3774	4074
DISP INC.	$6818	$12,355	$14,419
% CHG SINCE 1972	--	81%	111%
% CHG SINCE 1981	--	--	17%
TOT COMP.	$11,279	$22,754	$27,058
% CHG SINCE 1972	--	102%	140%
% CHG SINCE 1981	--	--	19%

TABLE 19

COMPENSATION COMPARISONS

MINIMUM WAGE EMPLOYEE

20 YEARS OLD, FAMILY SIZE = 1

	1972	1981	1985
SALARY	$3328	$6968	$6968
PENSION	666	1394	1394
OTHER BENEFITS	376	1894	2341
TAXES	451	1360	1234
DISP INC.	$2887	$5629	$5755
% CHG SINCE 1972	--	95%	99%
% CHG SINCE 1981	--	--	2%
TOT COMP.	$4370	$10,256	$10,703
% CHG SINCE 1972	--	135%	145%
% CHG SINCE 1981	--	--	4%

TABLE 20

COMPENSATION COMPARISONS

CIVIL SERVANT, PAY GRADE/STEP = GS-18/1

48 YEARS OLD, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$36,000	$50,113	$68,700
PENSION	7200	10,023	13,740
OTHER BENEFITS	1082	3742	5303
TAXES	12,804	19,808	27,251
DISP INC.	$23,196	$30,305	$41,449
% CHG SINCE 1972	--	31%	79%
% CHG SINCE 1981	--	--	37%
TOT COMP.	$44,282	$63,878	$87,743
% CHG SINCE 1972	--	44%	98%
% CHG SINCE 1981	--	--	37%

TABLE 21

COMPENSATION COMPARISONS

CIVIL SERVANT, PAY GRADE/STEP = GS-13/3

38 YEARS OLD, 16 YEARS OF SERVICE, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$19,987	$34,184	$40,105
PENSION	3997	6837	8021
OTHER BENEFITS	956	3496	4987
TAXES	6084	11,329	12,521
DISP INC.	$13,903	$22,855	$27,584
% CHG SINCE 1972	--	64%	98%
% CHG SINCE 1981	--	--	21%
TOT COMP.	$24,940	$44,517	$53,113
% CHG SINCE 1972	--	78%	113%
% CHG SINCE 1981	--	--	19%

TABLE 22

COMPENSATION COMPARISONS

CIVIL SERVANT, PAY GRADE/STEP = GS-11/4

37 YEARS OLD, FAMILY SIZE = 4

	1972	1981	1985
SALARY	$14,641	$24,736	$29,018
PENSION	2928	4947	5804
OTHER BENEFITS	930	3429	4908
TAXES	3748	6918	7816
DISP INC.	$10,893	$17,818	$21,202
% CHG SINCE 1972	--	64%	95%
% CHG SINCE 1981	--	--	19%
TOT COMP.	$18,499	$33,112	$39,730
% CHG SINCE 1972	--	79%	115%
% CHG SINCE 1981	--	--	20%

TABLE 23

COMPENSATION COMPARISONS

CIVIL SERVANT, PAY GRADE/STEP = GS-7/1

25 YEARS OLD, FAMILY SIZE = 2

	1972	1981	1985
SALARY	$9053	$15,193	$17,824
PENSION	1811	3039	3565
OTHER BENEFITS	916	3399	4866
TAXES	2103	3855	4396
DISP INC.	$6950	$11,338	$13,428
% CHG SINCE 1972	--	63%	93%
% CHG SINCE 1981	--	--	18%
TOT COMP.	$11,780	$21,631	$26,255
% CHG SINCE 1972	--	84%	123%
% CHG SINCE 1981	--	--	21%

TABLE 24

COMPENSATION COMPARISONS

CIVIL SERVANT, PAY GRADE/STEP = GS-4/1

20 YEARS OLD, FAMILY SIZE = 1

	1972	1981	1985
SALARY	$6544	$10,963	$12,862
PENSION	1309	2193	2572
OTHER BENEFITS	376	1894	2341
TAXES	1682	2614	3398
DISP INC.	$4862	$8349	$9464
% CHG SINCE 1972	--	72%	95%
% CHG SINCE 1981	--	--	13%
TOT COMP.	$8229	$15,050	$17,775
% CHG SINCE 1972	--	83%	116%
% CHG SINCE 1981	--	--	18%

TABLE 25

SUMMARY OF KEY IDEAS

— Basic Military Compensation rose by 138.5% from 1972 through 1985 (Table 8), and by 17% from 1981 through 1985 (Table 26).

— Consumer prices increased by 166.7% from 1972 through 1985 (Table 8), and by 16.4% from 1981 through 1985.

— The officers in this study had disposable incomes 16% to 22% higher than their counterparts in 1981. They have kept pace with the 16.4% inflation over that period.

— The officers in this study had disposable incomes 132% to 141% higher than their counterparts in 1972. They have not kept pace with the 167% inflation over that period.

— The enlisted soldiers in this study had disposable income increases of 12% to 15% since 1981, which did not keep up with the 16.4% inflation.

— The enlisted soldiers in this study had disposable income increases of 138% to 173% since 1972. Only the very lowest pay grades kept pace with the 167% inflation over that period.

— Basic Military Compensation (Table 8) rose by 17.0% between 1981 and 1985, compared to a 19% rise in average hourly earnings in the private sector.

— Total Military Compensation (Table 9) rose by 23.6% between 1981 and 1985, compared to a 26.4% rise in the Total Compensation Employment Cost Index over the same period.

TABLE 26

SUMMARY OF KEY COMPARISONS

	% CHANGE 1972 - 1985	% CHANGE 1981 - 1985
HREARN	137.1	19.1
CPI	166.7	16.4
MILPAY	138.5	17.0
TCMIL	167.0	23.6
PATC	165.0	28.7
MINWGE	109.3	0.0
GS	98.4	17.3
OPM	124.3	28.9
ECI-WS	--	22.5
ECI-TC	--	26.4

HREARN = Average Hourly Earnings in Private Nonagricultural Industries
CPI = Consumer Price Index
MILPAY = Basic Military Compensation Index
TCMIL = Total Military Compensation Index
PATC = Professional, Administrative, Technical and Clerical Index
MINWGE = Minimum Wage Index
GS = Civil Service General Schedule Index
OPM = Office of Personnel Management Comparability Index
ECI-WS = Employment Cost Index: Wage and Salary Series
ECI-TC = Employment Cost Index: Total Compensation Series

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